

APPENDIX

Notes For FOMC Meeting
February 5, 1991
Sam Y. Cross

The Gulf conflict dominated foreign exchange trading during much of the period since you last met. Nervousness over the conflict, about whether it would result in war and if so how long and broad the conflict might be, provided waves of support for the dollar through December and most of January. It was not until last week, when changes in Bundesbank and Federal Reserve discount rates underscored the divergent trends in interest rates in the two countries that market attention turned back to economic conditions here and abroad. When that occurred, the dollar fell to reach a new historic low against the mark yesterday morning.

The dollar is now 1 to 2 percent below the levels prevailing at the time of your mid-December meeting. In the interim, however, there was considerable volatility, and the dollar came under two periods of strong upward pressure, both associated with political developments abroad. In the second of these episodes, the dollar moved up to Y138 and DM 1.55 as the first reports of war in the Gulf reached the market. From these levels, the dollar then reversed course and within hours tumbled a full 4 to 5 percent back down to its mid-December levels.

Recognizing the potential for great volatility in financial markets, we had begun before January 15 to consult informally with the Bundesbank and the Bank of Japan about how we might work together to deal with any shocks or unusual pressures in the exchange markets. We explored various possibilities. In the event, neither the Bundesbank nor the Bank of Japan wanted to agree to any precise program in advance, although both professed a willingness to cooperate if

conditions warranted. The Japanese were more reluctant to consider operations in their currency than the Germans, reflecting the fact that the dollar was not nearly as close to its all-time low against the yen as it was against the mark and that the Japanese have been under considerable pressure from the Europeans to let their currency appreciate further.

As it turned out, the dollar moved up with the increasing prospect of war in mid-January and the outbreak of allied bombing on January 16. However, the possibility of war had been well anticipated so that market operators were quick to take advantage of the run-up of rates to take profits on long dollar positions. Some of the longer-term position takers actually moved to establish short-dollar positions, believing that a quick and decisive war would allow the market to return its attention to underlying economic and interest rate trends. As a result, the dollar turned around abruptly as I have already mentioned and has tended to move irregularly lower since then. The G.7, at its meeting on January 21, said merely that they were "prepared to respond as appropriate to maintain stability in international markets" and had little market impact. In informal discussions, Treasury tested sentiment about a concept of more specific trading ranges but found both the Germans and the Japanese skeptical about any formal undertakings.

Last week, sentiment toward the dollar weakened further as divergent economic trends in the United States, on the one hand, and Germany and Japan, on the other, became increasingly apparent and took their toll. A number of developments drew market attention away from the Gulf war. Most notably there were the German interest rate hikes on Thursday, followed on Friday by the release of U.S. employment data and the subsequent reduction in our discount and federal funds rates.

Also, there were comments on the need for lower interest rates by the President, Secretary Brady and others, which reinforced expectations of continuing interest rate reductions. All of this tended to overwhelm the factors supporting the dollar and the dealing community's reluctance to go short dollars.

In that environment, we contacted the Bundesbank and agreed that we would jointly act to resist further significant dollar declines. As events unfolded, the dollar broke through its previous historic low of DM 1.4625 yesterday, and hit a new low of about DM 1.4560 by 8:00 a.m. The Desk initiated two rounds of concerted intervention around the 9:00 a.m. opening in New York. We purchased a total of \$100 million against marks, and were joined by 14 other central banks which together bought a total of \$325 million, nearly all against marks.

On the basis of the market reaction and the commentary we subsequently received from the other central banks, these operations were successful, at least initially. However, there have been further pressures today, and there are further operations. Market participants were impressed with the evidence of G-7 cohesion in the exchange area. But, it is clear that the current interest rate differentials against the dollar and the presumption of further declines in dollar interest rates weigh heavily against the dollar.

On another matter, we have continued to sell, as customer operations, currencies received by Treasury from German and Japanese contributions to Desert Shield. During January, we sold

under this arrangement.

Mr. Chairman, I request the Committee's approval for the Federal Reserve's purchase of \$50 million against marks yesterday, our only operation on behalf of the System during the period. This

represents the Federal Reserve's half of the \$100 million intervention yesterday.

Notes for FOMC Meeting
Peter D. Sternlight
February 5-6, 1991

The past intermeeting period was marked by unprecedented turbulence in the market for bank reserves--the Federal funds market--as bank reserve managers and the System's Trading Desk coped with year-end pressures, the phase-down of reserve requirements that brought required reserve balances down to levels insufficient at times to meet clearing needs, and some large day-to-day projection errors. Amazingly, notwithstanding the turbulence, market participants were never in much doubt as to the thrust of policy and the Desk was able to communicate policy moves quite clearly to the market.

The first such move was undertaken shortly after the Committee's December 18 meeting. The afternoon of that meeting, the Board approved a 1/2 percentage point reduction in the discount rate to 6 1/2 percent. Beginning the next day, the Desk aimed for reserve conditions associated with Federal funds trading around 7 percent--down 1/4 percentage point from the previously expected rate. The market got the message fairly readily, although actual funds rates showed considerable variation going into the year-end period and the phase-down of reserve requirements. The second move was made around January 9, in particular response to soft money growth, and also against the

broad background of weakness in the economy and slackening inflation. The funds rate was now expected to vary around 6 3/4 percent. Once again, the market got the point quickly even though variations in the funds rate were so wide as to render the idea of a central tendency rather abstract. While year-end pressures, as such, had passed, we were still living with the aftermath of the huge provisions of reserves to cope with year-end, and at the same time with the constraints introduced by lower reserve requirements. Those reductions brought the need for balances at the Fed for reserve requirement purposes down to the point where the more critical factor was often the need to maintain sufficient balances for clearing purposes. The third move came near the end of the period, following the Board's further reduction of the discount rate by another 1/2 percentage point to 6 percent. This time, as noted at the Committee conference call last Friday morning, just before the discount rate move was announced, the decision was to have the full 50 basis point cut show through to the funds rate, reducing the expected rate to around 6 1/4 percent. Once again, even though funds were rather volatile over the day last Friday, the new 6 1/4 percent level was communicated fairly clearly.

On average over reserve maintenance periods, funds were not vastly different from the expected central points, but the averages concealed some very wide variations, not just on settlement days--to which markets have been accustomed--but also on many other days. Funds averaged about 7 1/4 percent in the reserve period ended December 26, reflecting pre-year-end

firmness--but with actual rates as low as 1/16 percent on December 24 and as high as 100 percent on December 26. In the January 9 period, when the objective was 7 percent until the final day, the average turned out around 6.80 percent, with some trading as low as zero on the year-end date and as high as 12 or 13 percent at other times. For a few days near the start of the January 23 period it appeared that greater stability had returned, with funds holding close to the 6 3/4 percent objective, but greater volatility soon returned and we saw rates as high as 30 and 90 percent on the last two days of that period. The period average was again around 6.80 percent, with benefit of luck.

The current period has again seen much variability, averaging around 7 1/8 percent through yesterday with a range of roughly 1/4 to 15 percent. The particular reason for volatility in this current period seems to be that balances maintained at the Fed to meet reserve requirements are exceptionally low, as vault cash is seasonably high and requirements seasonally low (as well as having been reduced by the December action). This apparently meant that the binding constraint on balances was the need for balances for clearing purposes--a highly variable quantity that we are still learning to track. Projection misses added to the problem, and the effects of misses tended to be magnified as the smaller volume of maintained reserves provided less cushion to absorb day-to-day flows. In addition, my impression is that the funds market has "thinned out" in the sense that participants are more name

conscious about counterparties. There are some institutions that don't want to sell, or would sell only limited amounts to certain others. This has led to reported situations, especially in late-day activity, of trades going through at widely different rates at about the same time.

While the path level of borrowing remained in the \$100-125 million range, actual borrowing often exceeded this level, especially on tight funds days. For full reserve periods, average borrowing ranged from about \$275 million to \$850 million, though this current period is coming out somewhat under \$200 million. Part of the borrowing reflected the needs of Bank of New England, but on average this was a small factor as they were able to leave the window once Treasury tax and loan account balances built up in mid-January. The highest daily borrowing came at the ends of the December 26 and January 23 periods, in each case about \$5 billion. On both occasions there was a deceptively comfortable money market on the morning of those settlement days that precluded aggressive Desk action to provide for projected needs, lest the market be misled about policy; and then there were large projection misses to boot, though we would have been reluctant to add more reserves on those occasions even if our projections had been accurate!

Demands for excess reserves were highly variable, as noted, reflecting year-end and the complications introduced by the reserve requirement cut along with the emerging need for clearing balances. Excess normally had ranged within a few hundred million of \$1 billion. In the December 26 period, which

saw the first part of the reserve requirement phase-down, excess bulged to about \$2 billion. In the next period, which saw the rest of the reserve requirement cut as well as year-end, excess soared to around \$3 1/2 billion--though this was evidently more than was really wanted and led to large carry-overs into the next period. In that interval, ended January 23, excess dropped to a currently estimated \$900 million--and was probably less than was desired given the very tight close. In the current period, now drawing to an end, demands have bulged again, apparently to something around \$3 billion.

At the start of the intermeeting period, it appeared that there would be some reserve needs up through about year-end, but then huge needs to absorb reserves as the year-end factors faded, revealing the excess reserves released by the reserve requirement reduction and augmented by seasonal movements in currency and required reserves. The Desk's initial strategy was to meet reserve needs with repurchase agreements while at the same time gradually lightening outright holdings through run-offs of bills and sales to foreign accounts. As the Committee will recall, the need to absorb reserves by end of the period looked so large that we requested a substantial increase in the standard intermeeting leeway. Part way through the period, the reserve outlook changed dramatically as prospectively high Treasury balances after the mid-January tax date and large currency outflows apparently related to the Middle East substantially reduced the projected need to drain reserves. Thus after running off just \$2 billion of bill holdings and selling \$1.6 billion of

bills to foreign accounts we discontinued the shrinkage of our outright portfolio--thereby not even using the normal leeway never mind the expanded amount.

Meantime, heavy use was made of temporary transactions, especially repurchase agreements, with unusually large volumes employed just before year-end. Specifically to deal with year-end pressures, a new technique was used a few days before the year-end, in which we arranged forward RP's in heavy volume, to take effect on the year-end date. This seemed to be particularly helpful in relieving the somewhat paranoid market fears about getting financed on that day. On a few occasions, after our exceptionally heavy provisions of reserves had flooded the market and rates were very soft, we arranged matched sale-purchase transactions in the market to extract seemingly over-abundant reserves. The volatility and uncertainty were such, though, that on at least one occasion after extracting reserves with matched sales--a move that we felt virtually obliged to undertake lest the market falsely conclude we were easing--the funds market subsequently became excessively tight.

The gyrating funds rate seemed to have little effect on other market interest rates. Rather, those rates responded to a variety of influences over the period, including news on the economy, prices, money growth, perceived policy moves, and of course Middle East developments. On net, the Treasury yield curve steepened appreciably as short term rates came down under the impact of policy easings. Key bill rates fell about 70-80 basis points--not far from matching the full percentage

point decline in the System's expected funds rate. In last Monday's 3- and 6-month bill auctions the average rates were 5.97 and 5.94 percent, down from 6.78 and 6.77 percent just before the last meeting date. Net bill issuance was about unchanged over the period as increases in the regular weekly cycles were about offset by a December paydown of cash management bills. Meantime, increasing amounts of bills were absorbed by noncompetitive tenders, probably reflecting to some extent anxieties about the financial system.

Rates on commercial paper and bank CDs dropped by roughly 100 to 175 basis points, with the larger declines in the shorter maturities where the passage of year-end was a prominent factor. Banks cut their prime rate a full percentage point, in two stages, to 9 percent. The first cut followed the mid-December discount rate reduction rather sluggishly as most banks waited for the passage of year-end before acting. The second came with greater alacrity in response to the latest discount rate cut and perceived reduction in the Fed's funds rate goal.

For intermediate and longer maturities the rate declines were much less--about 20-50 basis points for Treasury issues due in 2 to 7 years and about 15-20 basis points for the longer term issues. Indeed, over much of the period, the yield on long Treasuries was higher than in mid-December, reflecting worries about the Middle East, and at times a view that the economy might not be as soft or inflation as subdued as it appeared at other times. Continuing additions to supply, actual or prospective, were also a factor in the intermediate and longer

area. Counting the current quarterly financing, for which auctions are now being held, the Treasury will have raised nearly \$38 billion in the coupon market since the December meeting, while Refcorp raised another \$7 billion in January using up its authorized borrowing limit. After taking very negatively the news of the breakdown in the Baker-Aziz talks in early January, the market responded favorably to the early reports of Allied military successes just after hostilities began at mid-month. But that merely brought the 30-year yield back to around the 8.20 percent level prevailing in mid-December. A further yield decline after last Friday's weak employment report and discount rate cut led to the moderate net decline for the full period, with the long bond now yielding a bit over 8.00 percent.

Throughout the period, there has been market expectation of further Fed easing to come, though with much variation of views about the timing and extent of specific moves. In general, the actual moves in the recent period seemed to come a bit sooner and more aggressively than most participants had anticipated. At the moment, in the wake of last Friday's policy steps it is not yet clear how much more the market looks for. My sense is that most participants anticipate nothing further for at least a few weeks, with the timing and extent of any subsequent moves dependent on information on the economy, credit and money growth, and Middle East developments. Many share the view that if the war ends quickly, this could give a big lift to business and consumer sentiment. The consequences of a longer conflict are far less certain.

Finally, I should mention that another firm left primary dealer ranks in the recent period. Security Pacific, after a restructuring that dismantled its merchant bank had at first sought to keep the primary dealer going and perhaps place it in a joint venture with a foreign bank, but then decided to draw back to just a localized dealership. That shrank the number of primary dealers back to 40.

Michael J. Prell
February 5, 1991

CHART SHOW PRESENTATION -- DOMESTIC ECONOMIC OUTLOOK

We are going to depart today from our past approach. Rather than giving you a complete sector-by-sector recitation of our projection, we are going to try to zero in on some key questions that previous discussions led us to think might be on your minds.

The first chart outlines our presentation. I'll start by summarizing the forecasts you gave us; then, I'll say a few words about the war and the budget, and about the credit crunch. Larry Promisel will take the floor next, examining the exchange rate outlook and also the prospects for the oil market. He'll then address the concern a number of you have expressed previously about the consequences for our exports if growth abroad is disappointing. Another question that you've asked previously, namely, what will propel our projected economic upturn, is partially addressed by looking at the external sector, but Larry Slifman will try to give you a more complete answer. He'll also examine the issue of whether we've turned the corner on the core rate of inflation and he'll address the question of how fast the economy can grow without invigorating inflation. I shall then conclude by exploring, through model simulation, the consequences of a substantial Fed easing; this seems even more germane now, given that our assumption that the fed funds rate would remain at 6-3/4 percent already has been violated.

So let me get the ball rolling by turning to chart 2, where you'll find the familiar table summarizing your forecasts for 1991.

Before I say anything more, I probably should give you a few seconds to look at the figures--and to discern where you stand relative to your colleagues.

The central tendencies I've listed encompass the vast majority of you. In case you are curious, the median forecasts were one percent for real GNP, 3-3/4 percent for the CPI, and 6-3/4 percent for the year-end unemployment rate. On this basis, you shared the Administration's view of the real outlook but were more optimistic with respect to inflation. I should note that, despite comments by Administration officials about the scope for further Fed easing, their forecast involves a 3-month bill rate averaging 6.4 percent in 1991, about a half-point above today's level.

The staff finds itself with precious little company in its optimism about growth prospects for the year; we're a shade above your median inflation forecast, with that difference being entirely consistent with our lower expected unemployment rate.

The lower table summarizes the staff forecast. As you know, we have projected that the recession will end in the next few months and that growth thereafter will be sufficient to push unemployment back down to 6 percent in 1992. Consumer price inflation should slow markedly in the current quarter, owing to the drop in energy prices, but we also see a considerable deceleration in the CPI ex food and energy over the next two years, as a result of the slack in the economy.

I perhaps should say a word at this point about how news since last Wednesday's Greenbook publication would alter our expectations. In a nutshell, the latest data suggest to us that activity probably was a

little weaker at the start of the year than we estimated. We said in the Greenbook that we thought GNP might decline "somewhere between...1 and 2 percent" in the current quarter, and we'd be inclined now to move to the 2 percent end of that range. On the other hand, the 1/2 percent further reduction in the funds rate and the accompanying easing of long rates would seem adequate to roughly offset that negative surprise by the end of the year, and, if maintained, perhaps to put us on a slightly higher path in 1992. All of this really is finer tuning than anyone's forecasting skills would warrant, however, and my basic message is that we still believe the odds favor an early and solid, though not spectacular, upturn in activity--given our conditioning assumptions.

One of those assumptions is that fiscal policy will place less restraint on aggregate demand than we previously had anticipated, owing in part to the war. The top panel of chart 3 depicts the change in our projection for defense purchases since the December Greenbook. As you can see, purchases already considerably exceeded our expectations in the fourth quarter. Moving the troops and equipment to the Gulf accounted for a good chunk of the outlay, but there are also indications that new supplies were purchased, a portion out of added current U.S. production. Once the war commenced, we had to make some assumption regarding its length and cost, and about the degree to which the future path of defense purchases would be affected. As indicated, the result was an elevation of the pace of defense purchases by roughly \$20 billion, at an annual rate, through next year.

As we said in the Greenbook, however, incremental expenditures of the magnitude we've assumed might well involve no expansion of the

federal deficits for fiscal 1991 and '92, thanks to the contributions from other countries. Even so, we've raised our projections of the deficits, somewhat, based in part on new information about the costs of other programs, and as the first line of the table shows, we foresee deficits of around \$275 billion, plus or minus several billion, this year and next. In economic terms, these deficits greatly overstate the government's absorption of national saving. If you strip out the transfers associated with the deposit insurance programs, the deficits drop under \$200 billion, and if you take out other purely financial transactions and make a few more technical adjustments, you get a deficit on a national income accounts basis that moves down to \$136 billion in fiscal 1992. That's just a little more than 2 percent of GNP, a low figure, by recent standards.

Our fiscal impetus measure, charted in the bottom panel, suggests that, despite the recent additions to our spending projection, the federal government still will be imposing a modicum of restraint on growth in aggregate demand.

I'd like to turn now to the question of the credit crunch. This is still a rather murky area, but the next couple of charts contain a few relevant facts. The solid line in the top panel of chart 4 indicates that net funds raised by domestic nonfinancial sectors, measured relative to GNP, decreased substantially after the mid-1980s, but have changed little in the past year and a half. Although the current level of this ratio is low by the standards of the 1970s and the 1980s, it isn't by those of earlier years.

There are a whole lot of things going on in this time series. However, it strikes me as interesting that, if one were to shift the date of the onset of the current recession back to sometime in 1989, the recent behavior of the funds-raised ratio would look more similar to previous cyclical patterns. Perhaps not just coincidentally, this would fit with the fact that interest rates peaked in mid-1989, after which there was a period of very slow economic growth. As you know, this recession differs from those in the past in that rates turned down well before the business cycle peak and growth was unusually weak prior to that peak.

Even with this time-shift I've suggested, the behavior of depository credit in the current episode would stand out. As indicated by the dashed line, there is no recent precedent for the kind of deceleration in depository credit that we're experiencing. Moreover, in previous recessions sluggishness of depository credit often was clearly importantly related to weak aggregate credit demand or to voluntary shifts by corporate borrowers to the bond markets to fund-out short-term debts. You'll recall that, in our surveys early last year, weak credit demands were cited by bankers as damping loan growth. But with many banks and thrifts obviously capital-constrained, if not out of business entirely, one wonders whether the sharp decline in depository lending isn't signaling a supply-side pressure that is further depressing overall financing volumes and economic activity.

There can be no doubt that the sudden loss of intermediation services from depositories--not to mention the problems of insurance companies and other institutions--has adversely affected the cost and

availability of credit to ultimate users of funds. Just how seriously is the only real question.

One may note, to begin with, that the bulk of the contraction of depository credit is accounted for by the shrinkage of the thrift industry, and the availability of the mortgage-backed securities market has permitted a fairly efficient rechanneling of flows to the home mortgage sector--the S&Ls' primary clientele.

Of course, commercial banks did not take up the S&L slack and bank credit has decelerated recently, a swing that looks rather modest by historical standards, but nonetheless a source of concern, especially in terms of the supply of credit to businesses. The middle panel shows a couple of the traditional indexes of strains in the business credit market. The spreads of private short- and long-term rates over Treasuries have widened, but they remain well below previous cyclical peaks; indeed, they've exhibited nothing like the swings we've observed in the past. Of course, what isn't shown here is the junk bond spread, and the effective shut-down of that market clearly made a difference for a significant class of borrowers.

But a greater focus of concern in discussions of the credit crunch is the plight of the smaller businesses, which always have been more dependent on loans from banks and other intermediaries. The results of the survey of the National Federation of Independent Business, charted in the lower panel, show a surprisingly mild increase in the past year in the net percent of respondents reporting credit harder to get versus those reporting it easier to obtain. Consistent with one's expectations, however, the swing is much more noticeable

among firms in New England, where credit was comparatively easy to come by in the mid-'80s. Indeed, this morning, we got a revised fourth-quarter number and a January figure, which put the New England index around the 1982 peak of 26 percent. The national index for January was 14 percent, versus 13 percent in the fourth quarter.

The bottom line would seem to be that, overall, small businesses are suffering, but perhaps not generally to the degree suggested by the outcry we're hearing--or perhaps even as much as they have in other business slumps. This conclusion seems to be supported by the fact that, although it has moved up on the NFIB members' "single most important problem" poll, financing still ranks only sixth, vastly outdistanced by taxes, regulation and poor sales.

Whatever the magnitude of the tightening in credit supply conditions to date, we expect that things will get worse before they get better. Some reasons for that conclusion are indicated in chart 5. As shown at the upper left, the rating services have been downgrading corporate securities at an unprecedented clip in the past year, and we see no abatement in the near term, in part because the recession is further eroding already slim interest-coverage ratios, reflected at the right. We expect quality spreads to widen further and, with firms, moving down the rating spectrum, this means a double-whammy in their financing costs. Banks are likely to be cautious lenders, too, in this environment.

The bottom left panel shows two household loan delinquency series. The message they, and other series, convey is that debt-servicing performance among households has been better, but it doesn't

look especially bad against the experience of the past 10 or 15 years-- despite the run-up in debt-servicing burdens depicted in the right-hand panel. The delinquency rates only go through the third quarter of last year, however, and we would expect to see some rise in subsequent quarters and some greater degree of caution, as a result, on the part of lenders.

Our conclusion on the credit crunch, then, remains what it has been for some time: the strains in the financial sector have been a negative for aggregate demand, and credit quality problems are likely to intensify those strains in the near term; however, we don't think the credit crunch was so severe a negative as to explain the recession or that it will override the other forces that will work to produce an economic upturn.

Let me now ask Larry Promisel to carry on the presentation.

Larry Promisel
February 5, 1991

Chart Show, February 5, 1991 -- International Developments

An expectation that U.S. exports will grow strongly has been an important feature of the staff forecast for some time. Anecdotal evidence, including information reported from many districts in the Beige book, is consistent with a fairly strong outlook for exports; so is the Survey of Purchasing Managers released last Friday. However, as was suggested in Mike's list of questions, what happens with respect to the dollar, oil prices, and foreign demand will play a determining role in the actual outcome.

Chart 6 provides some perspective on the dollar. As shown by the black line in the top panel, the price-adjusted exchange value of the dollar has declined significantly -- about 18 percent -- from a peak in mid-1989, with half of that decline coming in the past 6 months. The dollar is now trading around its historic lows, on a weighted-average basis. In broad terms, the dollar's depreciation has corresponded with relative movements in real long-term interest rates. Using one measure of expected inflation, foreign rates in real terms now are higher than they were a year and a half ago, though not as high as they were last fall. In contrast, real rates in the United States are little changed on balance over that whole period, so that the differential has moved against dollar assets by about 1 percentage point.

As shown in the middle left panel, the dollar has declined more than 10 percent against European currencies and the yen since the previous chart show, but is little changed against the Canadian dollar and the currencies of Korea and Taiwan. Three-month interest rates -- the middle right panel -- have risen almost a percentage point in Germany and Japan since June, while U.S. rates have declined -- indeed, by a bit more than is shown in the chart because the full effect of Friday's easing is not reflected there. Long-term rates edged down abroad, though not as much as here.

In our forecast, the dollar remains near its recent lows. This assumption is based in part on the view that monetary policy abroad will change little, on balance. If the dollar does follow something like its assumed path -- depicted by the black line in the bottom panel -- it will enhance the competitiveness of U.S. goods to a degree that is unusual in previous cyclical experience. On average in four previous cycles, beginning in 1969, the dollar had been fairly flat over the 4 quarters preceding the peak of the cycle and rose slightly in subsequent quarters. The extent to which the dollar fell prior to the peak of the present cycle, fell a bit further after the peak, and remains low in the forecast was matched only by the 1973-74 experience.

Chart 7 addresses the oil market. I hesitate to say much about oil, given the uncertainties associated with it, but it obviously has the potential to affect significantly the outlook for world activity and inflation. Following the spike in

spot prices for West Texas Intermediate -- the red line in the upper panel -- the U.S. import unit value for oil -- the black line -- rose sharply in the fourth quarter, but we assume it will decline in the current quarter and will settle at \$21 per barrel over the remainder of the forecast horizon. This is above the price assumed in last July's chart show, prior to the Iraqi invasion, but is lower than in the December Greenbook. For reference, futures prices, also drawn in the panel, imply a price path somewhat below the staff forecast.

A structure of OPEC production that we believe would be consistent with our price path is shown in the middle panel. Essentially, Saudi Arabia is assumed to be able to maintain production at its recent high rates of 8.5 mbd before letting it fall back as Iraqi production gradually, and Kuwaiti production even more gradually, come on stream. Obviously, one could come up with variations on this theme; the controlling premise is that once things settle down in 1992, OPEC, and Saudi Arabia in particular, will adjust production to achieve the \$21 per barrel target price agreed upon in the OPEC Accord last July.

As implied in the bottom panel, stocks, which were built up as production exceeded consumption in the first half of 1990, will be run down in 1991. With stocks expected to be in reasonable balance in 1992, production next year is set to equal consumption at volumes consistent with a price of \$21 per barrel.

The next chart addresses the question of foreign growth. Industrial production in the major foreign industrial countries (the G-6) is shown in the top panel. One aspect that is

immediately apparent is the divergence of growth performances over the past year. Prominent in the upper left panel is the decline in production last year in Canada and the United Kingdom combined, with the decline starting earlier and extending deeper in Canada. The experience in Canada and the United Kingdom contrasts sharply with that in Japan, where industrial production increased rapidly during 1990. There is widespread expectation of a slowing of activity in Japan, partly in response to monetary tightening that began last spring and partly reflecting presumed effects of declines in prices of equities and land. Indeed, one can point already to some signs of slowing: weak auto sales and housing starts, and rising corporate bankruptcies. But labor markets remain tight and, on balance, the Japanese economy still seems to be strong.

Activity in Western Germany -- the upper right panel -- has been boosted by demand associated with unification with Eastern Germany, coming on top of an already strong economy. A declining German trade surplus suggests some spillover of German demand to other countries, but such a spillover is not yet apparent significantly in data for Germany's principal European partners. In these circumstances, it is not surprising that the Bundesbank's actions to tighten policy, even though taken in response to strong demand, have not been welcome elsewhere in Europe.

Germany continues to enjoy a good inflation performance, especially relative to the United Kingdom and Italy -- the two middle panels. This inflation differential exacerbates pressures

on exchange rates within the European Monetary System; it makes it more difficult for France, Italy, and the United Kingdom to reduce their interest rates, which they might otherwise choose to do.

Therefore, as noted in the bottom panel, we expect monetary policy abroad to remain cautious. German interest rates are still assumed to move a bit higher before coming back down later this year and next. Scope for interest rates to decline in other countries is assumed to arise only as inflation rates come down, suggesting little change in real interest rates. In nominal terms, declines in interest rates are likely to be especially large in the United Kingdom and Canada, where monetary policy tightened sooner to bring inflation rates down. We are anticipating that interest rates in Japan will fall gradually as both economic growth and inflation subside.

We expect fiscal policy abroad to be essentially neutral on average. In Germany, spending associated with unification will add fiscal stimulus this year but, we think, less next year as other government spending is cut or as taxes are raised.

The outlook for activity and prices abroad is shown in Chart 9. As shown by the red bars in the upper left panel, growth of real GNP in the rest of the world, which slowed last year, is forecast to pick up this year and further in 1992. As shown in the upper right panel, this is true both for the G-6 countries and for the rest of the world. With respect to G-6 countries, recoveries from the recessions in the United Kingdom and Canada starting in the second half of this year are an

important element in our forecast. We expect that growth will slow somewhat in Germany and Japan but will remain in both countries in the 3.5 to 4 percent range. Inflation rates in major foreign industrial countries, which were boosted last year by the rise in oil prices -- the middle panels -- are forecast to decline. On a fourth-quarter to fourth-quarter basis, consumer prices are forecast to rise next year at about the same rate in G-6 countries as in the United States.

We think our forecast for growth of real GNP in other major countries, shown again by the black line in the bottom panel, is reasonably balanced; it does not differ significantly from other forecasts. We see upside risks, including the possibility, which seems to be gaining some acceptance in financial markets, that the Bundesbank will not raise interest rates further and may even lower them, with a corresponding easing of policy constraints elsewhere. However, we recognize that there are downside risks, as well. Some of these are specific to individual countries. Other risks, like greater disruptions in the oil market, adverse effects from problems in real estate or financial markets, or weaker outcomes in Eastern Europe -- are common to many countries, albeit to varying degrees. To provide a feel for the sensitivity of U.S. exports to these downside risks, the dashed red line presents an alternative, more pessimistic, outlook for growth in major foreign countries. The level of real GNP at the end of the forecast period is about 2 percent lower on average in this alternative than in the Greenbook forecast, with some variation

across countries. I will describe the simulated effects of lower foreign growth on U.S. exports in a moment.

The Greenbook forecast for exports is shown in the upper panels of the next chart. The quantity of non-agricultural exports was flat in the middle quarters of last year, following a spurt early in the year. Nevertheless, strong growth again in the fourth quarter boosted growth over the year to 10 percent. We are forecasting that exports will continue to grow at a rate of about 10 percent over the next two years, supported by recent gains in U.S. price competitiveness and the projected pickup in growth abroad.

Agricultural exports -- the middle panels -- also were weak in the middle quarters of 1990 and, indeed, for the year as a whole. We are forecasting that, after sales of grain to the Soviet Union and China boost shipments in the first half of this year, agricultural exports will change little over the remainder of the forecast horizon.

The implications for exports of the alternative scenario for growth in major foreign countries are shown in the bottom panels. The difference in growth between the Greenbook and that alternative is especially great for Canada, the United Kingdom, and Japan, which together account for a 40 percent share of U.S. exports. We did not assume significantly different growth in countries other than the G-6, which purchase half of our exports. By the end of the forecast period -- shown at the bottom right -- the quantity of exports of goods and services combined would be about \$15 billion (or 2 percent) lower with the alternative path

than in the Greenbook. Some of the contractionary effect from lower exports would be absorbed by lower imports, so that net exports would be only \$9 billion lower. In this simulation, we held U.S. money growth to the baseline path.

While exports are seen as a crucial element in the overall outlook, imports obviously are important too. As shown in the top panel of Chart 11, the quantity of non-oil imports is forecast to rise only 2 percent from the fourth quarter of 1990 to the fourth quarter of 1991. We expect the decline in the dollar that has occurred to date to give a further boost to U.S. activity by shifting demand away from imports toward domestic production. The slow growth of imports also reflects the weakness of U.S. aggregate demand, and to that extent, of course, cannot be said to boost domestic activity. In 1992, as U.S. demand picks up and the effects of the decline in the dollar wear off, the quantity of non-oil imports is forecast to rise more rapidly.

The quantity of oil imports, shown in the middle panel, fell in the fourth quarter of last year, because of the decline in activity, warm weather, and a shutdown of some refineries for maintenance. The value, of course, rose sharply with the jump in prices. A withdrawal from the strategic petroleum reserve will restrain imports in the current quarter, after which the quantity of oil imports is expected to grow over time as consumption increases and as domestic production continues to trend down.

In nominal terms, as shown in the bottom left panel, U.S. external balances are forecast to continue to improve over

the forecast period. The current account -- the black bars -- is forecast to improve more rapidly than the merchandise trade account, reaching a deficit of only \$33 billion in 1992. The faster improvement in the current account reflects, in part, a further increase in net receipts for a variety of services. The relative improvement in the current account also reflects the cash transfers the United States expects to receive from other countries in connection with the financing of the war in the Persian Gulf, which are counted in the current account but not in GNP; these are assumed to equal \$20 billion in both 1991 and 1992.

In real terms -- the bottom right panel -- we are forecasting that exports of goods and services will grow more rapidly than imports. As a result, net exports (in 1982 dollars) will continue to improve, adding \$29 billion to GNP (or nearly 3/4 percent) over the course of this year, and another \$17 billion over the course of 1992.

Larry Slifman will continue our presentation.

Lawrence Slifman
February 5, 1991

CHART SHOW PRESENTATION -- GNP AND AN ECONOMIC UPTURN

Let me continue with the staff GNP projection and the question:
"What will bring about an economic upturn?"

Chart 12 highlights a key element in our assessment of the outlook--that is, the inventory situation and the balance between production and aggregate demand. The upper panel shows real GNP--the heavy line--and real final sales. The area between the two lines is inventory investment--with periods of liquidation indicated by the shaded portions. As can be seen, producers moved aggressively in the fourth quarter to hold inventories in check, cutting output while final sales were essentially flat. These pre-emptive production adjustments had the desired effect. As shown in the bottom panel, the inventory-sales ratio for all nonfarm businesses--already quite low by historical standards--is estimated to have fallen further in the fourth quarter.

You can see from the insert panel that we expect final sales to fall at about a 1-1/4 percent pace in the first quarter. However, we think that producers will continue to cut output even faster, thereby pushing the inventory-sales ratio even lower. With inventories relatively lean, a firming in final sales beginning in the second quarter should be translated promptly into higher production. Indeed, for a few quarters, we expect output to grow faster than sales as producers swing from inventory liquidation to a modest rate of accumulation.

Your next chart highlights the sources of the upturn in final sales that we expect will begin in the spring. The lower portion of the table shows contributions to real GNP growth--measured in percentage points. We project that real final sales--line 2--will account for 1.7 percentage points of the growth in real GNP during the second quarter. As Larry just explained, foreign demand for U.S. goods should provide important support to domestic production. Among the components of private domestic final purchases, lines 7 through 9, we are projecting a resumption of consumption growth that is quite modest compared with previous cyclical recoveries, and a halt to the slide in residential construction activity. Because of the critical role of consumption and housing in our projected upturn, the next chart highlights some of the elements that went into our thinking about these two sectors.

The sharp rise in oil prices and a heightened sense of uncertainty in the aftermath of the invasion of Kuwait, combined with rising joblessness and pervasive fears about recession and financial fragility, dealt a blow late last year to consumer sentiment--the upper left panel--and consumer spending, and likely will depress consumption in the current quarter as well. But consumer outlays, especially for big-ticket items, had been subdued for some time prior to the Iraqi invasion. As shown in the upper right panel, demand pent up during the long, deep 1982 recession led to an extraordinary surge in sales of autos and light trucks in the mid-1980s. Thus, as we have noted before, the slowdown in sales that began in the second half of 1989 probably represents, at least to an extent, a stock adjustment. As shown in the middle left panel, a similar pattern occurred for other types of durable

goods--VCR's, household furnishings, jewelry, and so forth--as spending growth during the mid-1980s far exceeded real income gains (the middle right panel). Then, while consumers were catching their breath after the 1980s spending spree and increasing their saving, real income in the last part of 1990 took a hit from the oil price shock, further depressing demand.

Looking forward, we expect a recovery in consumption to begin sometime this spring, although we think it will be quite moderate, with the saving rate remaining elevated. The pickup in spending reflects several factors. Perhaps most important, the drop in consumer energy prices since the November peak, which began to affect real income in December, will boost real DPI further in the first half of 1991, giving households the wherewithal to spend more. In addition, with the assumed ending of hostilities in the Gulf, we anticipate that some of the uncertainties currently depressing consumer sentiment will be eliminated, and household willingness to spend will rise. Finally, with spending having been depressed during 1990, we think households will have some pent up desire to spend.

Another influence on the projected upturn is a bottoming out of the housing market. A key element in that projection is affordability. As shown in the bottom panel, the declines in mortgage rates over the past two years and the softness in house prices have combined to ease the cash-flow burden of homeownership since mid-1989. Although lower house prices are a two-edged sword, we think that their positive influence on affordability will outweigh their negative influence on investment motives for homebuying. In this regard, we view the recent

rise in sales of existing homes as suggesting that prices may have reached levels acceptable to both potential buyers and sellers, which, if correct, might signal a bottoming out of the real estate slump. Nonetheless, housing clearly is a risky sector in our projection, especially in light of the possibility of continued constraints on builder financing. One encouraging note, however, is that--despite reports for more than a year now of cutbacks in loans for land acquisition and development--a recent survey by the homebuilders association suggests that builders still have an ample inventory of finished and unfinished lots.

On balance, then, we expect the projected economic upturn in the second quarter to be brought about by relatively strong growth of exports, a resumption of growth in household spending, and an end to the housing slide, accompanied by a swing in inventory investment.

Your next chart addresses the question, "Have we turned the corner toward lower core inflation?" One key element, of course, is the behavior of wages--the subject of the upper panel. In this chart, we have split the employment cost index into two components--sales workers (the striped bars) and other private industry workers (the shaded bars). The reason is that commissions are an important part of the compensation of many sales workers. Thus, changes in the ECI for sales workers appear to be quite sensitive to changes in activity or unemployment, while changes in compensation for non-sales workers appear more sensitive to the level of activity or unemployment. This was quite clear in 1990, when the unemployment rate averaged 5-1/2 percent--about equal to our point estimate of the natural rate; for the year as a

whole, compensation for non-sales workers rose at about the same pace as in 1988 and 1989, while the ECI for sales workers slowed sharply as real estate transactions were falling and other sales were sluggish.

With the unemployment rate projected to peak at nearly 6-1/2 percent in the second quarter, and then level off at about 6 percent during 1992, we expect slack demand to put downward pressure on compensation of non-sales workers over the course of the next two years. During the first half of this year, compensation of sales workers is projected to hold down the overall ECI; but as the economy begins to recover, we expect rising commissions to restrain the deceleration in total employment costs a bit.

The deceleration of wages, along with a relatively mild expansion of activity that is not expected to create any bottlenecks, shortages, or capacity constraints, leads us to project a slowing in the core inflation rate--proxied in the bottom panel by CPI's excluding food and energy. Much of the slowing is in the services component, the shaded bars, which had been accelerating through much of 1990. Prices of consumer commodities other than food and energy are projected to pick up in 1991, in part because of this January's hike in excise taxes as well as the passthrough of the lower value of the dollar to prices of imported goods. But an underlying deceleration becomes evident in the latter part of this year and throughout 1992.

As I just indicated, the inflation projection depends critically on our expectation that the economy will continue to have some slack in resource utilization over the next two years. The staff report on the outlook for potential GNP that we sent to you last week

addresses the supply side of this issue in detail. Chart 16 summarizes the results of the report in the context of the latest Greenbook GNP projection. Our analysis suggests that the growth rate of potential GNP averaged 2.6 percent during the 1980s, and that the pace probably has slowed a bit recently. Through the middle of the 1990s, we are projecting potential to rise 2.3 percent per year.

As shown on line 3, part of the projected slowing between the 1980s and 1990s is simply a matter of demographics--there will be fewer people reaching the age of 16. More difficult to forecast is the behavior of the participation rate (line 4)--especially in light of the drop over the past year. Sorting out the trend, cycle, and random components of the recent numbers is hazardous at best, but it appears to us that most of the shortfall reflects cyclical or random elements, and we expect the underlying trend during the first half of the 1990s to slow only by a tenth of a percentage point. At the same time, we are projecting a small pickup in the growth of labor productivity (line 8). Given the wide swings over the past three decades in the residual component of productivity (line 15), our forecast of trend productivity also has a great deal of risk.

The bottom panel shows our estimates of the levels of actual and potential GNP. As explained in the report, our central forecast of the projected level of potential is consistent with a 5.6 percent natural rate of unemployment. This, too, has a wide band of uncertainty. The shaded area takes into account some of our uncertainties about both the current level and the projected growth rate of potential. In any event, you can see that even using the lower bound

of this uncertainty band, the level of real GNP is projected to remain slightly below potential at the end of 1992. This, of course, suggests the possibility for further progress in reducing inflation in 1993.

Mike will now complete our presentation.

Michael J. Prell
February 5, 1991

CHART SHOW PRESENTATION -- CONCLUSION

The final chart presents the results of a "what if" experiment that your action last week suggests may not be entirely fanciful. Anticipating that there might be considerable skepticism about our relatively rosy Greenbook projection for economic growth, we thought it would be useful to offer you some idea of what it might take to achieve a similar result if the economy were weaker, in terms of underlying demands for goods and services at given interest rates. In scenario 1, we've assumed that the economy, in this sense, is one percent weaker in 1991 and 1992, and that, as a consequence, you ease policy in the near term enough to overcome that greater weakness and to achieve the Greenbook output level by late next year. There are many interest rate paths that might achieve this result; the one we ran through our econometric model is shown in the bottom panel and has the funds rate reaching 5 percent in the next couple of months and then moving back up to 6-3/4 percent by the end of 1992, so as to avoid overshooting.

Of course, there is, I hope, at least the possibility that the staff is correct in its more bullish view of aggregate demand. And so we have concocted Scenario 2. Here we assume that we are right about the underlying strength of the economy but that you either don't believe us or feel it appropriate to take out some insurance. You lower the funds rate to 5 percent, only to realize around midyear that the economy actually is as strong as we predicted and so you switch gears to restrain aggregate demand enough to hold real GNP in late 1992 to the

Greenbook level. The last line in the bottom panel shows that our model says you would need to jack the funds rate up to around 8 percent by early next year in order to achieve that outcome.

Admittedly, these scenarios are quite arbitrary constructs, but they do seem relevant in light of the differences between the staff and FOMC forecasts that I presented earlier. I hope that, in combination with the model simulations presented in the Bluebook, they will at least give you some rough indication of the sensitivity of the economy to your policy decisions.